



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,264	05/09/2007	Yasutaro Seto	80400(303227)	3624
21874 7590 07/07/2011 EDWARDS ANGELL PALMER & DODGE LLP P.O. BOX 55874 BOSTON, MA 02205				
EXAMINER				
JOYNER, KEVIN				
ART UNIT		PAPER NUMBER		
1775				
MAIL DATE		DELIVERY MODE		
07/07/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,264

Applicant(s)

SETO ET AL.

Examiner

KEVIN JOYNER

Art Unit

1775

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-8 and 12-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-8 and 12-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-8, 12-23 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aibe et al. (U.S. Patent No. 5,288,306) in view of Toshihiko (Japanese Document No. JP 05-015576).

With regard to claims 1, 12 and 18 Aibe discloses a deodorizing filter comprising two separate halves (88 & 89), a first activated carbon deodorizing filter (88) being alkali regulated so as to intrinsically have a high-pH environment (column 5, line 25 to column 6, line 15) forming a first half (Figure 12) and a second activated carbon deodorizing filter (89) with phosphoric acid regulated so as to intrinsically have a low-pH (column 6, line 55 to column 7, line 13) environment forming a second half (Figure 12). Aibe does not appear to disclose that one or both deodorizing filter(s) is a filter of a cobalt phthalocyanine complex and an iron phthalocyanine complex supported on an active carbon filled paper, wherein one of said filters is alkali regulated with sodium hydroxide to have a high pH environment. Toshihiko discloses chemical solutions utilized in deodorizing filters with active carbon filled papers (paragraphs 1 and 58). The reference continues to disclose that the chemical solution is one that includes a cobalt

phthalocyanine complex or an iron phthalocyanine complex (paragraphs 13-16) that is alkali regulated with an aqueous sodium hydroxide solution (paragraph 56; concerning claims 26-28) so as to have a high pH environment (paragraphs 17, 56, 76 and 77) in order to create a deodorizing filter that is effective in humid environments against methyl mercaptan (paragraphs 4-6 and 97). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify one or both of the filters of Aibe to include a cobalt phthalocyanine complex or an iron phthalocyanine complex that is alkali regulated with a hydroxide so as to have a high pH environment in order to create a deodorizing filter that is effective in humid environments against methyl mercaptan as exemplified by Toshihiko.

Claims 4, 5, 7, 13, 14, 16, 19, 20 and 22 further require that the weight ratio of the phthalocyanine complex/iron phthalocyanine be between 95/5 to 55/45 and the amount of the complexes be in the range of 200 to 20,000 μ g with respect to 1 g of the paper. It would have been well within the purview of one of ordinary skill in the art to optimize weight ratios of said complexes and the amount of said complexes in order to maximize the deodorization effects against foul smelling materials such as hydrogen sulfide and mercaptan, as such are considered result effective variables to be optimized through routine experimentation. Only the expected results would be attained. (See MPEP 2144.05 [II]).

Claims 6, 15 and 21 further require that the pH of the high-pH environment is between 7.5-12.0 (as disclosed by Toshihiko; paragraph 27) and the pH of the low-pH environment is 1.5-5.0. The deodorizing filter of Aibe will produce a filter creating a high

and low pH environment as set forth above and disclosed in columns 4-7. Nonetheless, for further prosecution, it would have been well within the purview of one of ordinary skill in the art to optimize the high and low pH environment in the filter of Aibe in order to maximize the deodorization results against an acid and alkaline substance simultaneously. Only the expected results would be attained. (See MPEP 2144.05 [II]).

Claims 8, 17 and 23 further require that the active-carbon-filled paper contain active-carbon at a content of 40 to 80 mass %. As set forth in column 5, lines 1-8 of Aibe, said active-carbon-filled paper contains a content of at least 30% active-carbon or more. As such, it would have been well within the purview of one of ordinary skill in the art to optimize the amount of active-carbon in said filter paper in order to maximize the efficiency and effectiveness of the filtering process. Only the expected results would be attained. (See MPEP 2144.05 [II]).

3. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aibe et al. (U.S. Patent No. 5,288,306) in view of Toshihiko (Japanese Document No. JP 05-015576) as applied to claim 1 above, and further in view of Ishii et al. (U.S. Patent No. 5,830,414).

Aibe is relied upon as set forth above. Aibe does not appear to disclose that both filters have a quaternary ammonium salt. Ishii discloses a deodorizing filter comprising a first or second filter provided with one of an alkali or a phosphoric acid (column 2, lines 11-68). The reference continues to disclose that said filter is further provided with a quaternary ammonium salt in order to provide antibacterial properties for said filter

(column 3, lines 10-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the filters of Aibe to include a quaternary ammonium salt on said filters in order to provide antibacterial properties for said filter as exemplified by Ishii.

4. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aibe et al. (U.S. Patent No. 5,288,306) in view of Toshihiko (Japanese Document No. JP 05-015576) as applied to claim 1 above, and further in view of Lindhe (U.S. Patent No. 5,944,878).

Aibe is relied upon as set forth above. Aibe does not appear to disclose that the filters have hydrazine and polyvinylamine compounds. Lindhe discloses a deodorizing filter comprising a set of filters that are provided to remove malodorous gases from the air (column 3, lines 5-25). The reference continues to disclose that the filter is provided with hydrazine derivatives and polyvinylamine compounds (column 2, lines 55-68), or at least a known equivalent alternative thereof (column 4, lines 3-10), in order to remove contaminating gases such as formaldehyde (column 2, lines 55-68). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the filters of Aibe to include hydrazine and polyvinylamine compounds in said filters in order to remove contaminating gases such as formaldehyde as exemplified by Lindhe.

Response to Arguments

5. Applicant's arguments filed April 28, 2011 have been fully considered but they are not persuasive.

Applicant argues that:

a) The Applicants believe that it is misunderstanding due to incorrect machine-translation of Toshihiko. Toshihiko discloses a deodorant compound which comprise "hardly water-soluble metal hydroxide" which was wrongly translated as "damage-at-sea solubility metal hydroxide" in the machine-translation. Toshihiko does not in fact disclose a cobalt phthalocyanine complex or an iron phthalocyanine complex that is "alkali regulated with sodium hydroxide." Toshihiko is correctly translated as follows:

[0021] (b) Metal hydroxide

A metal hydroxide which is another component of the deodorant compound of this invention is preferably hardly water-soluble around neutral condition.

Specifically, it is a hardly water-soluble metal hydroxide, the dissolution amount of which is less than 5mg to 100ml of water. Preferably, hardly water-soluble one of the dissolution amount of less than 1 mg, more preferably less than 0.5mg is used. The hardly water- soluble metal hydroxide itself is publicly known and produced by a publicly known method

[0022] Such metal hydroxides include more than bivalent ones such as Al, Cu, Fe, Mn, Cr, Ni. Especially, hydroxides of Al and Cu are preferred and the one having larger specific surface area is specially proffered.

On the other hand, the present application states as follows (Specification, pages 13, and 14. Emphasis added):

[0041] It is possible to prepare the first deodorizing filter (2) under high-pH environment, by washing and drying the filter (honeycomb filter, etc.) of the cationized active-carbon-filled paper, immersing it in an aqueous alkaline solution containing a metal phthalocyanine complex, and washing and drying the resulting filter. The first deodorizing filter (2) under high-pH environment is not particularly limited to the filter prepared by the method above.

[0046] The aqueous solution above is not particularly limited, and for example, a nonvolatile mineral acid such as aqueous phosphoric acid solution, and the like.

Therefore, the hydroxide in the claims of this invention is clearly water-soluble hydroxide which is chemically different from a hardly water-soluble one. The present invention uses an aqueous hydroxide solution, while Toshihiko uses hardly water-soluble metal hydroxide. Moreover, the present invention uses an aqueous hydroxide solution to have a filter being alkali regulated so as to have a high pH environment, while Toshihiko uses hardly water-soluble metal hydroxide as another component of the deodorant compound. Therefore, they are different in action and function of metal hydroxide

The Examiner would contend that the currently amended claims are limited to an "aqueous hydroxide solution" and are not limited in a manner such that no solids are present in said aqueous solution. As set forth in paragraph 56 of Toshikiko, the filter is

regulated with a rare alkali fixing fluid or "sodium hydroxide aqueous solution".

Therefore, the filter is regulated with an aqueous hydroxide solution. It is further noted that although the disclosure of Toshikiko appears to limit the solution to one with a compound that is hardly water soluble, nonetheless, a portion of said compound is still soluble (i.e. ~5mg/100mg of water as set forth in paragraph 21). Thus, this limitation is met with respect to Toshikiko.

b) Moreover, as asserted again, the hydroxyl becomes water and is released to an outside of the filter system at the time of drying by adjusting the alkalinity of the filter with a metallic hydroxide. Metallic ions are absorbed by substituent (e.g., -COOH, -SO₃H) of a phthalocyanine complex in the claimed invention, therefore the claimed invention has an advantage that phthalocyanine complex, for example, does not lose its performance and features and can accomplish the unexpected result of deodorizing basic and acidic odors efficiently at the same time. If the "hydroxide" were "hardly water-soluble metal hydroxide" as of Toshihiko, the invention would not have such an unexpected result.

In response to applicant's argument that the hydroxyl becomes water and is released to an outside of the filter system at the time of drying by adjusting the alkalinity of the filter with a metallic hydroxide, thus accomplishing the unexpected result of deodorizing basic and acidic odors efficiently at the same time; the Examiner would note that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to

patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. As set forth above, Toshikiko discloses each structural component of this limitation in the claim, and therefore properly meets said limitations. Thus, the claim is considered unpatentable over Aibe in view of Toshikiko.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN JOYNER whose telephone number is (571)272-2709. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Marcheschi can be reached on (571) 272-1374. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCJ

/SEAN E CONLEY/
Primary Examiner, Art Unit 1775